XII.—*Additions to the* Tenebrionidæ *of Australia &c.*

By Francis P. Pascoe, F.L.S., F.Z.S., &c.

The following additions to the list of Australian Tenebrionidæ are mostly derived from a select collection sent me by Mr. George Masters, who has lately been collecting in Queensland and in Western Australia. The value of the collection was greatly increased by notes of the habits or other particulars of the species composing it. Among the three or four new genera here described, the most interesting perhaps is one belonging to Bolitophaginæ (*Mychestes*), which frequents rotten wood in which probably some minute fungus has made its appearance. A few species remain for further investigation, some not being in sufficiently good condition for description. In the collection, but not belonging to the Tenebrionidæ or even to the Heteromera, was a remarkable new form*, apparently of Monotomidæ, found in ants' nests,—also examples of Erichson's curious genus *Ancistria*, hitherto known only from India, and of which no species occurred in the wonderfully rich collections made by Mr. Wallace in the intervening Malayan islands.

Scymena† *amphibia*.

S. ovalis, pallide testacea, subnitida; scutello valde transverso; elytris sulcato-punctatis, punctis minutis.

Hab. King George's Sound (sea-shore, burrowing in the sand).

Oval, moderately convex, pale testaceous, slightly nitid; head finely punctured, line of separation between the clypeus and front not sharply defined, but of a darker colour; antennæ nearly as long as the breadth of the head, the outer joints slightly moniliform; prothorax rather finely punctured, the apex very slightly emarginate; scutellum very transverse; elytra sulcate-punctate, the punctures small, placed in shallow grooves, the intervals very minutely, almost obsoletely punctured; tibiæ and tarsi roughly ciliated, the latter somewhat slender. Length 3 lines.

In general appearance this species closely resembles the common *Phaleria cadaverina* of our southern coasts, and probably, like it, preys on dead animal substances when it has the opportunity. Mr. Masters says that it is found "burrow-

* Since this was written, I have seen reason to believe that this is the insect described by the Count of Castelnau, in the Rev. et Mag. de Zoologie for September, p. 356, under the name of *Nepharis alata*. It is referred to the Colydiidæ, and "perhaps near *Cossyphodes*," and figures are given (pl. 18. figs. 4, 5). The two specimens in the Count's possession were very imperfect.

† Pascoe, Journ. of Entom. ii. p. 455.

ing in the sand, generally above, but often below, high-water mark." *Scymena* differs *inter alia* from *Phaleria* in its deeply emarginate clypeus. As the genera of the Trachyscelinæ to which it belongs have been much increased since M. Lacordaire's volume on the Heteromera was published, the following table may be useful:—

Antennæ eleven-jointed.
  Antennæ longer than the head.
    Prothorax closely applied to the elytra.
      Elytra ciliated at the margins ..... *Ecripsis*, Pasc.
      Elytra not ciliated at the margins ..... *Phaleria*, Latr.
    Prothorax not closely applied to the elytra .... *Hyocis*, Pasc.
  Antennæ shorter than the head.
    Anterior tarsi retractile.
      Intermediate and posterior tarsi elongate, filiform ..... *Isarida*, Pasc.
      Intermediate and posterior tarsi short, stout.. *Ammobius*, Guér.
    Anterior tarsi not retractile.
      Antennæ with an abrupt three-jointed club .. *Charodes*, White.
      Antennæ gradually stouter outwards.
        Clypeus deeply emarginate ..... *Scymena*, Pasc.
        Clypeus entire anteriorly.
          Last tarsal joint as long as the rest together ..... *Ammidium*, Er.
          Last tarsal joint shorter than the rest together.
            Posterior tarsi filiform, elongate ..... *Emypsara*, Pasc.
            Posterior tarsi short, stout.
              Last joint of maxillary palpi securiform ..... *Sphargeris*, Pasc.
              Last joint of maxillary palpi fusiform *Anemia**, Casteln.
Antennæ ten-jointed..... *Trachyscelis*†, Latr.

Byrsax‡ *saccharatus.*

B. oblongo-quadratus, indumento albescente tectus; prothorace utrinque antice explanato, postice eroso, disco supra valde gibboso producto; elytris grosse tuberculatis.

Hab. Queensland (Pine Mountain, near Ipswich, in a *Boletus*).

Oblong-quadrate, covered above with a thick spongy-look-

* This genus, founded on an African (Senegal) insect, I have not seen; its place here may be somewhat doubtful. M. Lacordaire unites it, erroneously, with *Ammidium* (Gen. v. p. 725). A rare European insect (*A. sardoa*) is referred to it.

† M. Duval is the only author who has given the correct number of antennal joints in this genus (Gen. Col. d'Eur. iii. p. 288). In reference to his figure (pl. 71. fig. 352 *b*), I have failed to detect the moniliform structure of the club, and the basal joint is much larger and curved almost at a right angle. It must be recollected, however, that the whole antenna is not larger than the point of a fine needle.

‡ Pascoe, Journ. of Ent. i. p. 42.

ing whitish substance; head deeply sunk in the prothorax, the anterior portion spreading into two shortly triangular horns; prothorax with a very compressed disk, forming an oblique elevated tuberculate lobe, extending over the head, behind which are two erect well-marked conical tubercles, each side anteriorly expanding into a fan-shaped, strongly crenated margin, but posteriorly deeply and erosely emarginate, so as to present a large and irregular space between these fan-shaped expansions and the elytra; scutellum apparently large and triangular, but its limits indistinct; elytra nearly quadrate, the whole surface more or less tuberculate; the disk almost vertically elevated, with two conical tubercles at the base on each side, and towards the suture a line composed of four or five large triangular tubercles, the last being by far the largest; a row of six smaller tubercles externally on the descending side of the disk, the margin moderately expanded and regularly and coarsely crenato-tuberculate, the apical tubercle diverging slightly from its fellow; body beneath covered with a layer of the same spongy-looking substance as that above mentioned, but thinner; legs ferruginous, with a sprinkling of the same substance; antennæ with the last three joints forming a distinct club. Length $2\frac{1}{2}$ lines.

A remarkable and very distinct species, which I hope to figure in a future communication, with further remarks on this and other members of its subfamily, including the following new genus.

Mychestes.

(Subfamily *Bolitophagin*æ.)

Antennæ clavatæ, 10-articulatæ; clava biarticulata.
Tibiæ anticæ subfusiformes.
Elytra ovata; *metasternum* breviusculum.

Head broadly transverse, the clypeus not cornuted; antennary ridge simple. Eyes transverse, entire. Antennæ clavate, 10-jointed; scape elongate, the third joint as long as the scape, the rest to the eighth oblong ovate, the last two forming an ovate club. Prothorax transverse, rounded but not expanded into a border at the sides; the disk gibbous towards the apex, overhanging and concealing the head from above. Elytra ovate, convex, closely applied to the prothorax; the epipleuræ indeterminate. Legs moderate; femora not thickened; tibiæ subfusiform, scarcely compressed; tarsi with the terminal joint as long, or nearly as long, as the rest together. Pro- and mesosterna simple. Metasternum short.

This genus differs from *Orcopagia* (*ante*, vol. iii. p. 30)

chiefly in the form of the elytra and in the short metasternum, the latter character being an exceptional one in its subfamily. The female apparently only differs from the male in being broader and more bulky.

Mychestes lignarius.

M. fuscus vel fusco-ferrugineus, squamulis pallidioribus dispersis, supra fortiter tuberculatus.

Hab. Queensland (in rotten wood).

Dark brown or ferruginous brown, covered with loosely set small paler scales, and strongly tuberculate above; antennary ridge convex anteriorly; clypeus truncate, its junction with the head forming a broad deep groove; prothorax broader than the elytra, much rounded and bituberculate at the sides; the disk with a double row, slightly arched forwards, each of four tubercles; scutellum rounded, prominent; elytra ovate, raised at the sides, somewhat flattish above, each with a row of three large tubercles not contiguous to the suture, with a fourth but smaller tubercle in the same line behind, and at the sides seven nearly as large and irregularly arranged in two rows; legs somewhat hispid, the claws ferruginous; antennæ slightly setulose, the third joint as long as the two next together. Length 4 lines.

ISOSTIRA.

(Subfamily *OPATRINÆ.*)

Clypeus apice integer; *labrum* transversum, haud sinuatum.
Palpi maxillarum securiformes.
Prothorax elytris arcte aptatus.
Epipleuræ elytrorum postice deficientes.

Of this genus I have only a single specimen, and, as the males (and commonly the females) of the Opatrinæ have mostly dilated anterior tibiæ, whilst this has them of the ordinary form, it is possibly a female; or the character may be common to both sexes. The genus, however, allied to *Opatrum*, Fab., in the last three characters of the above diagnosis, is essentially differentiated by the clypeus and upper lip. The antennæ are rather short, the last six joints moniliform, forming a tolerably distinct club; of these the seventh to the tenth are very transverse; the labial palpi arise from the central portion of the labium, and not from its base as in *Opatrum* (*O. sabulosum*). The prothorax is more convex and overhangs the head, and is closely applied to the elytra. All the tibiæ are subfusiform or a little contracted at the extremity. The tarsi are slender and villous beneath.

Isostira crenata.

I. supra nigra, infra rufo-castanea; antennis pedibusque rufis; prothorace lateraliter crenato; elytris acute costatis.

Hab. Queensland (under bark of decaying trees).

Oblong, black above; head vertical, rather finely and closely punctured; eyes nearly entire; prothorax covered with a dull brownish exudation, its sides distinctly crenated, the disk raised and having anteriorly two short strongly elevated lines or ridges; scutellum rounded behind, indistinct; elytra glossy black (from abrasion?), each with five narrow sharply elevated ridges and a prominent line at the margin separating the epipleura from the upper portion, intervals of the ridges with two lines of shallow foveæ; body beneath reddish chestnut; legs and antennæ pale reddish. Length 3 lines.

Omolipus cyaneus.*

O. supra cyaneus, nitidus, infra fusco-castaneus, antennis pedibusque rufis glaberrimis; elytris fortiter seriatim et confertim punctatis.

Hab. Nicol Bay.

Very dark glossy blue above; head and prothorax very smooth and finely punctured; the latter a little gibbous anteriorly, the sides well rounded, the base and apex of nearly equal breadth; scutellum triangular; elytra rather narrowly ovate, strongly seriate-punctate, the punctures approximate, the intervals of the lines very narrow and convex; body beneath brownish chestnut, very glabrous; legs and antennæ reddish, smooth. Length 4½ lines.

Mr. Masters also finds this species at King George's Sound, under the bark of growing trees. It is at present the only one known not entirely black above.

Pterohelæus† arcanus.

P. latissime ovatus, brunneo-piceus, paulo nitidus; elytris singulatim unicostatis, lineisque subelevatis granulatis instructis, marginibus late foliaceis.

Hab. Queensland (Port Denison, under bark of living trees).

Broadly ovate, brownish pitchy, slightly nitid; head impunctate; the clypeus, marked off by a fine line, broad and rounded anteriorly; prothorax very short, deeply and narrowly emarginate at the apex, the middle of the disk with two conspicuous foveæ; scutellum transversely triangular; elytra moderately convex, with broad foliaceous margins raised and thickened at their edges, each elytron with a glossy elevated

* Pascoe, Journ. of Ent. i. p. 127.

† De Brême, Essai &c. p. 27.

ridge or line near the suture, terminating posteriorly in a number of small granules, a series of about six more or less elevated longitudinal lines, dotted with granules, on the rest of the elytron, one of these between the suture, which is also marked by a similar line, and the ridge, the remainder, of which the second and fourth are the most prominent, externally, the intervals of the lines minutely punctured in two rows; body beneath and legs glossy chestnut-brown. Length 9 lines.

Broader than *P. piceus*, Kirby, and strongly differentiated from every other species by the sculpture of its elytra.

Pierohelœus asellus.

P. ovalis, utrinque paulo incurvatus, fuscus, vix nitidus; prothorace obsolete punctato; elytris lineatim leviter punctatis, marginibus latitudine omnino æqualibus.

Hab. Queensland (under bark of fallen trees).

Oval, the outline equally rounded and rather obtuse at both extremities, the sides a little incurved, moderately convex, blackish brown, scarcely shining; head and prothorax covered with exceedingly minute punctures, the margins of the latter gradually passing into the disk; scutellum transversely and curvilinearly triangular; elytra linearly punctured, the punctures rather small, the fifth and eighth intervals between the lines a little broader than the rest, the margins concolorous, narrow, of equal breadth throughout, and agreeing with those of the prothorax; body beneath and legs glossy brown; antennæ short, the last joint nearly circular. Length $4\frac{1}{2}$–5 lines.

Resembles *P. peltatus*, De Br., but much more convex, nearly opaque, the margins of the prothorax and elytra much narrower and concolorous with the rest of the upper surface.

Helœus Mastersii.*

H. late obovatus, fuscus, squamositate grisea tenuiter tectus, setulisque erectis nigris instructus, in utroque elytro carina acute elevata, apicem haud attingens.

Hab. Western Australia (Salt River, under stones).

Broadly obovate, dark brown, covered with a loose greyish dust-like squamosity and furnished above with short erect black bristles; eyes approximate, nearly covered by the prothorax; the latter impunctate, nearly semicircular, not narrowed at the base, the margin broad, slightly concave, the centre with a narrow very distinct longitudinal ridge not quite extending to the base; scutellum transverse; elytra as broad at

* Latreille, Règ. An. ed. 1, iii. p. 301.

the base as long, broadest behind the middle, sides of the disk very convex, the margins moderately foliaceous, irregularly punctured, the intervals of the punctures with short bristles, the suture finely raised, and at a short distance on each side of it a strong carina not reaching to the apex, another, but nearly obsolete, at the same distance on the outer side; body beneath and legs dull brown, the latter especially covered with short hairs. Length $6\frac{1}{2}$–$7\frac{1}{2}$ lines.

Allied in form to *H. Peronii*, De Brême (Boisd.?), which, however, is a perfectly glabrous species, except as to the legs.

Saragus floccosus.*

S. late ovatus, fulvo-testaceus, subtiliter punctulatus; prothorace apice profunde et anguste emarginato; elytris haud carinatis, sutura elevata.

Hab. Queensland (Wide Bay, on trees; Brisbane, &c.).

Broadly ovate, moderately convex, fulvous testaceous, minutely punctulate; head small, eyes nearly contiguous; antennæ ferruginous; prothorax short, very transverse, brownish testaceous, the apex narrowly and deeply emarginate; elytra not carinate, the suture raised, the expanded margins rather narrow; body beneath and legs dark brown, shining; margins of the elytra beneath broad, glossy testaceous, minutely punctulate. Length 6 lines.

All the specimens I have seen of this insect have been covered with a close-set white flocculent substance, which Mr. Currey, than whom there could be no higher authority, considered to be a fungus belonging to the genus *Isaria* of Persoon, supposed to be the early condition of the Sphæriæ. This *Saragus*, Mr. Masters writes, is found "on trees covered with a white lichen which the insects very much resemble."

Saragus patelliformis.

S. subrotundatus, depressus, fuscus, fere glaber; prothorace in medio excavato; elytris tenuiter punctatis, indeterminate costulatis, sutura anguste elevata.

Hab. Western Australia.

Nearly round, depressed, blackish brown, somewhat shining, and nearly glabrous; head small, finely punctured, the intervals of the punctures granuliform; prothorax finely punctured, the disk narrow, with a well-marked central impression, each of the dilated margins as broad as the disk; scutellum very transversely triangular; elytra rather finely but irregularly

* Erichson, Wiegm. Arch. 1842, i. p. 171.

punctured, indistinctly ribbed, the suture raised into a finely marked narrow carina; body beneath dull black, the margins of the elytra glossy; legs slightly hairy. Length 4–5 lines.

A depressed form allied to *S. Duboulaii*, Pasc., but, *inter alia*, with a very distinctly elevated suture.

Saragus incisus.

S. obovatus, fuscus, opacus, postice convexior; prothorace lobo gibboso postice angulato-emarginato; elytris singulatim unicostatis, extus triseriatim tuberculatis.

Hab. New South Wales (Mudgee, under stones).

Obovate, dark brown, opaque; head and prothorax covered with short minute ridges (except the centre of the latter), and more or less longitudinal or slightly oblique; eyes not approximate, front rather concave; prothorax deeply emarginate at the apex, the angles on each side produced, subacute, behind the middle a slightly gibbous lobe angularly emarginate posteriorly; scutellum broad, rounded behind; elytra gradually broader behind for about two-thirds of their length, the suture finely raised, each elytron with a stout costa near the suture, abruptly terminating near the commencement of the posterior declivity, the space between the two irregularly but finely punctured, between the costa and expanded margin three rows of small elevated tubercles; body beneath and legs black, rather glossy. Length 10 lines.

A very distinct species, approaching, but only to a limited extent, *S. lævicollis*, Fab., and its allies.

Saragus asperipes.

S. breviusculus, obovatus, fusco-niger, opacus; elytris lineatim subtiliter punctatis, marginibus angustis, haud corrugatis; tibiis tuberculato-hispidis.

Hab. South Australia (Port Lincoln, under stones).

Rather shortly obovate, brownish black, opaque; clypeus slightly emarginate; head and prothorax finely but not closely punctured, the latter with the disk slightly convex, distinctly separated from the margins, and of a paler brown, raised and thickened at the edges; scutellum broadly transverse; elytra more convex posteriorly, finely punctured in slightly irregular lines, every fourth interval between the lines slightly elevated, the margins very narrow and gradually obliterated posteriorly, not marked with transverse folds; body beneath and legs brown, slightly nitid; tibiæ covered with small hispid tubercles; tarsi yellowish ferruginous; antennæ with the last joint nearly circular. Length 5–6 lines.

Allied to *S. simplex**, Hope, but shorter and more convex, with a narrow margin to the elytra, and hispid tibiæ. The former species has the elytral margins marked with delicate transverse folds.

Saragus confirmatus.

S. obovatus, niger, subopacus; elytris singulatim quadricostatis, costis apicem versus evanescentibus, marginibus obsoletis.

Hab. West Australia (Mr. Duboulay).

Rather broadly obovate, black, slightly opaque; head finely punctured, broad in front, the clypeus not emarginate; prothorax very minutely punctured, the disk slightly convex, distinctly separated from the margins, which are unicolorous and not thickened at the edges; scutellum broadly transverse; elytra more convex posteriorly, impunctate, but closely covered with minute granules, each with four elevated lines gradually disappearing posteriorly, the first and third strongly marked, the fourth nearly obsolete, the suture raised, the margins not dilated, except very slightly at the anterior angles, and forming a narrow elevated edge; body beneath and femora brownish black, finely punctured; tibiæ minutely spinulous; tarsi slightly ferruginous; antennæ blackish, the last joint nearly circular, ferruginous. Length 6 lines.

Narrower than the last (*asperipes*), but at the first glance somewhat similar; it is, however, a very distinct species, and the elytra are totally destitute of dilated or foliaceous margins; but there is such a gradual approach to this in some other species as almost to take its absence out of the category of generic characters.

Adelium† *geminatum.*

A. fusco-cupreum, subnitidum; prothorace pone medium valde incurvato, supra canaliculato; elytris interrupte striatis.

Hab. Queensland (Wide Bay, under logs in dense scrubs).

Dark copper-brown, faintly nitid; head finely and irregularly punctured, the clypeus narrow anteriorly and rather strongly emarginate; prothorax transverse, irregular above, finely and unequally punctured, with a slender longitudinal groove, the sides strongly rounded, and behind the middle deeply incurved and terminating in a sharp angle; elytra broader than the prothorax, subovate, rounded at the shoulders, interruptedly striate, the alternate intervals of the dorsal

* This species appears to me to be the same as *S. carinatus*, De Br., of which possibly *S. silphoides* of the same authority is only a variety.

† Kirby, Trans. Linn. Soc. xii. p. 420.

striæ rather broader than the others; body beneath and legs dark copper, the former nearly glabrous, the latter with a few scattered hairs. Length 5–6 lines.

In outline approaching *A. cisteloides*, Er., and its allies; but the form of the prothorax and the rather peculiar sculpture of the elytra make it a very distinct species.

Licinoma elata.*

L. cuprea, nitida; elytris profunde punctato-striatis; tarsis longiusculis, fulvis.

Hab. Queensland (Wide Bay, under logs and stones).

Copper-brown, shining, and finely punctured as in *L. nitida* (*ante*, ser. 4. vol. iii. p. 140), but longer, the prothorax more rounded at the sides, considerably narrower, and much more finely punctured above; scutellum distinct and triangular; elytra deeply sulcate, the interstices narrow, but very convex and finely punctured, the punctures continued to the sulci, but scarcely apparent in the sulci themselves; the most trenchant difference is that the anterior tarsi in both sexes have not the second and third joints short and transverse, as in my specimens of *L. nitida*, but triangular, shortly so in one, probably the male, and longer and ovate in the others: in the typical form of the genus the claw-joint is nearly as long as the rest together, while in the present species the four basal joints are together half as long again as the claw-joint; in both the joints of the antennæ are connected by short peduncles (or moniliform). Length 5 lines.

Dinoria† cœlioides.

D. cuprea, nitida; elytris sat late punctato-striatis, marginibus concoloribus.

Hab. Queensland.

Copper-brown, shining; head rather finely and distantly punctured; the clypeus concave in the middle, the suture straight; prothorax transverse, finely punctured; scutellum very transverse, short, indistinct; elytra obovate, rather finely punctate-striate, the intervals between the striæ not approximate, flattish, very delicately punctured, the margins and apex concolorous; body beneath very glossy, reddish chestnut; legs yellowish testaceous, the bases of the femora chestnut; palpi and antennæ pale ferruginous, the last joint of the latter broadly oval, much shorter than the two preceding together. Length $2\frac{3}{4}$ lines.

* Pascoe, Ann. & Mag. Nat. Hist. ser. 4. vol. iii. p. 140.

† Pascoe, *ibid.* p. 141.

More convex than *D. picta*, and the eyes not quite so round. The scutellum of the latter was, from some oversight, stated to be "narrowly," instead of broadly, triangular, but it is not so transverse, although much more distinct than in the present species.

Seirotrana Mastersii.*

S. oblonga, cupreo-metallica; prothorace subplanato, marginibus integris; elytris ovatis, lineis interruptis elevatis, interstitiis biseriatim sub-vage punctatis.

Hab. Queensland (Wide Bay, under logs in dense scrubs).

Oblong, shining metallic copper; head roughly punctured, the clypeus broad, truncate anteriorly; prothorax nearly flat above, minutely punctured, with a few much larger punctiform impressions irregularly scattered, the sides rounded, but a little incurved towards the base, the margins with a raised linear border; scutellum transversely triangular; elytra slightly convex, ovate, each with four raised interrupted lines, the intervals between them biseriately punctured, the punctures rather small and not approximate; body beneath and legs glabrous, brassy, and very glossy. Length 9 lines.

A fine and very distinct species, with the sculpture of the elytra like that of *S. catenulata*.

Seirotrana nosodermoides.

S. subplanata, fusca, indumento umbrino dense tecta; prothorace lato, apice profunde emarginato, utrinque crenato; elytris interrupte costulatis.

Hab. Queensland (Wide Bay, under logs).

Rather flattish above, dark brown, covered with a dense umber-brown scaly crust, readily peeling off; head roughly impressed, a stout ridge on each side in front of the eye, meeting on the vertex, and forming with the clypeus a triangular space; prothorax longer than broad, the disk with five broadly impressed longitudinal grooves, the apex widely and deeply emarginate, the anterior angles produced, passing beyond the eyes, the sides coarsely crenated, and forming an obtuse angle at the middle, then slightly incurved to the base; scutellum semicircular; elytra ovate, each with five interrupted elevated lines, alternating with finer lines of the same character, the inner nearly contiguous to the suture, the intermediate spaces irregularly punctured; body beneath with an easily displaced reddish-brown crust; the legs with scattered adpressed hairs. Length 6 lines.

* Pascoe, Journ. of Entom. vol. ii. p. 483.

A strongly marked species, its habit suggesting the North-American genus *Nosoderma*.

Amarygmus tyrrhenus.*

A. suboblongo-ovalis, violaceo-purpureus, vel violaceo-chalybeatus, nitidus; elytris parallelis, striato-punctatis, punctis subapproximatis, interstitiis modice convexis, vix punctatis; tarsis sat gracilibus.

Hab. Western Australia.

Moderately oblong-oval, violet-purple, or steel-blue with a violet tinge, glossy, and more or less varying according to the light; head not closely punctured, a little convex between the eyes; antennæ black, rather short; prothorax rather transverse, minutely and somewhat remotely punctured; scutellum curvilinearly triangular; elytra somewhat narrow comparatively, the sides parallel, striato-punctate, the punctures rather close, the intervals of the striæ moderately convex, nearly impunctate, or with a very minute puncture here and there; body beneath glossy, black; legs dark steel-blue. Length 4–5 lines.

A striated species, with rather narrow elytra, especially in the male—a character by which it appears to be well differentiated. Mr. Masters sends me a specimen of *A. Howittii* (*ante*, vol. iii. p. 348) from Port Lincoln, much more coppery than the two I received from Dr. Howitt; also two individuals of *A. suturalis* (*ante*, vol. iii. p. 350), one of which is destitute of the rich colour (bright golden green in the other) which adorns the type specimen.

Amarygmus maurulus.

A. ovalis, niger, vix nitidus; elytris cyaneo-nigris, leviter striato-punctatis; pedibus antennisque ferrugineis.

Hab. New South Wales (Illawara).

Oval, or in one sex narrowly oval, black, scarcely shining; head rather narrow, almost impunctate, the clypeus distinctly punctured; antennæ slender, ferruginous; prothorax moderately transverse, impunctate; scutellum triangular; elytra dark blue-black, finely striate, the striæ with elongate, slightly approximate punctures, the intervals of the striæ rather broad, not convex, with a very delicate scattered punctation; body beneath blackish brown; legs ferruginous, the femora glossy, tarsi slender. Length 3–3½ lines.

A small dull-looking insect, approaching *A. tarsalis*, but with a more approximate punctation on the elytra, and differently coloured.

* Dalman, Anal. Entom. p. 60.

Amarygmus variolaris.

A. subanguste ovatus, æreus, subnitidus; elytris punctis distinctissimis irregulariter dispersis.

Hab. Queensland (Wide Bay, under the bark of trees).

Rather narrowly ovate, yellowish brassy, not very glossy; head rather broad, finely and somewhat sparingly punctured; antennæ brownish chestnut, the third joint shorter than the two next together; prothorax strongly transverse, finely punctured; scutellum triangular; elytra oblong, moderately convex, the sides very gradually narrowing from the base, more rapidly rounding towards the apex, with opaque, dark-greenish, irregularly dispersed, and somewhat distant punctures; body beneath yellowish brassy, shining; legs glossy brownish chestnut. Length $3\frac{3}{4}$ lines.

One of the most distinct species of the genus, on account of the peculiar sculpture of the elytra. Of the two specimens which I received from Mr. Masters, one (the male?) has the three basal joints of the anterior tarsi short and strongly dilated,—while in the other they are very slender and elongate; the antennæ are also almost linear, with the outer joints oblong: in the former the antennæ are imperfect, but they appear to be stouter.

Eurypera.

(Subfamily *Amarygminæ*.)

Caput ad oculos retractum.
Oculi supra haud approximati.
Tarsi subtus pilosi.

Except that the body is shorter and more convex, the rest of the character is as in *Amarygmus*. The terminal joint of the labial palpi is so large as nearly to cover the labium; but this is only a modification of the *Amarygmus*-character.

Eurypera cuprea.

E. cupreo-metallica, nitida: antennis, pedibus, corpore infra, nigris, glabris.

Hab. Queensland (Port Denison).

Reddish copper, shining; head finely and rather sparingly punctured; upper lip black, connected with the clypeus by a bright orange membrane; prothorax very transverse, gradually broader and rounded at the sides, the apex moderately emarginate, the disk covered with fine distant punctures; scutellum triangular; elytra not broader than the prothorax at the base, strongly rounded at the sides, finely sulcate, the sulci black,

with oblong, distant, indistinct punctures, the intervals very minutely punctured; body beneath and legs black, glabrous, shining; antennæ black, slightly thicker outwards. Length 4½–5 lines.

XIII.—*On the Organization of Sponges, and their Relationship to the Corals.* By Ernst Häckel.

[Continued from p. 13.]

What raises our deduction as to the common origin and genealogical relationship of the sponges and corals to a perfect certainty is the hitherto entirely overlooked *fundamental agreement of the sponges and corals (and, indeed, of all the Cœlenterata) in the ontogenetic building-up of their body from two different layers of cells or germ-lamellæ—the entoderm and ectoderm.* In all Sponges (just as in all Acalephs, Corals, Hydromedusæ, and Ctenophora) all the parts of the body are developed by the differentiation of two distinct cellular layers —an inner formative membrane, the *entoderm*, and an outer formative membrane, the *ectoderm. In all Sponges, as in all Acalephs*, the inner germ-lamella (or entoderm) forms the epithelial lining of the nutrient canal-system, as well as the spores or sexual products (ova and zoospermia), which are nothing more than sexually differentiated cells of this canal-epithelium; the outer germ-lamella (or ectoderm), on the other hand, forms the entire external wall of the canal-system and the principal mass of the body in general, which is differentiated in the higher Sponges and Acalephs into epidermis, connective tissue, skeletal parts, muscles, &c. *The cells produced from the entoderm or inner formative membrane perform the vegetative functions of nutrition and reproduction both in the Sponges and in the Acalephs. The cells which originate from the ectoderm or outer formative membrane, on the other hand, perform the animal functions of movement and sensation*, and serve also as a *protective covering* and as *supporting skeletal parts* for the whole body. It will therefore seem to be not inappropriate if in *all Cœlenterata* (i. e. *in all Sponges and Acalephs*) we designate the *entoderm* (or inner formative cell-layer) *as the vegetative germ-lamella*, and the *ectoderm* (or outer formative cell-layer) *as the animal germ-lamella.* The wide view which is presented to us by this conception, and by its comparison with the corresponding relations of the germ-lamellæ in the higher animals, and which is well adapted to elucidate the primitive relationship of all the stems of the animal kingdom, *i. e.* the common derivation